



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/811,872

03/30/2004

Kazuo Fujita

Q80665

2481

23373 7590 05/17/2007  
SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

MAIL DATE

DELIVERY MODE

05/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/811,872

Applicant(s)

FUJITA, KAZUO

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Please note that the examiner of record has changed. The new examiner is Callie Shosho.
2. All outstanding rejections are overcome by applicant's amendment filed 2/27/07.

In light of the new grounds of rejection set forth below, the following action is non-final.

**Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (U.S. 6,645,881).

Yamada et al. disclose coating solution for silica-based film wherein the coating comprises low vapor pressure solvent possessing boiling point of 200-300 °C such as decanol, tetradecyl alcohol, and heptadecyl alcohol, additional solvent, and hydrolyzed silane comprising (1)  $R_aSi(OR^1)_{4-a}$  wherein R is hydrogen or monovalent organic group,  $R^1$  is monovalent organic group, and a is 1 or 2 and (2)  $Si(OR^2)_4$  wherein  $R^2$  is monovalent organic group. It is noted that silane (1) includes vinyltrimethoxysilane which is identical to silane of presently claimed formula (I) when  $R^2$  is vinyl,  $R^3$  is methyl, m is 1, and n is 0 and that silane (2) is identical to

silane of presently claimed formula (II) and includes tetramethoxysilane which corresponds to presently claimed formula (II) when  $R^2$  is methyl and  $p+q$  is 0. There is also disclosed method for forming a silica-containing film comprising applying the coating to substrate and then drying, i.e. heating, to obtain a silica-containing film (col.3, lines 23-26 and 37-40, col.4, lines 9-15, col.5, lines 36-40, col.5, line 56-col.6, line 5, col.7, lines 49-50, and col.14, lines 18-30). It is noted that page 9 of the present specification defines void-forming solvent as one with boiling point not less than 200 °C and thus, it is clear that the low vapor pressure solvent of Yamada et al. is identical to the void-forming solvent presently claimed.

In light of the above, it is clear that Yamada et al. anticipate the present claims.

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (U.S. 6,645,881) in view of Zama (U.S. 2004/0034147).

The disclosure with respect to Yamada et al. in paragraph 4 above is incorporated here by reference.

The difference between Yamada et al. and the present claimed invention is the requirement in the claims of hollow polymer.

Zama, which is drawn to coating for semiconductor as is Yamada et al., disclose the use of hollow polymer particles in order to produce coating with good alkali, weather, heat, and oil resistances that is added to semiconductor coating in order to use a low dielectric property of air (paragraphs 10 and 39).

In light of the motivation for using hollow polymer particles disclosed by Zama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such hollow polymer particles in the coating of Yamada et al. in order to produce coating with good alkali, weather, heat, and oil resistances, and thereby arrive at the claimed invention.

7. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (U.S. 6,645,881).

Yamada et al. disclose coating solution for silica-based film wherein the coating comprises low vapor pressure solvent possessing boiling point of 200-300 °C such as decanol, tetradecyl alcohol, and heptadecyl alcohol, additional solvent, and hydrolyzed silane comprising (1)  $R_aSi(OR^1)_{4-a}$  wherein R is hydrogen or monovalent organic group,  $R^1$  is monovalent organic group, and a is 1 or 2 and (2)  $Si(OR^2)_4$  wherein  $R^2$  is monovalent organic group. It is noted that

silane (1) includes vinyltrimethoxysilane which is identical to silane of presently claimed formula (I) when  $R^2$  is vinyl,  $R^3$  is methyl,  $m$  is 1, and  $n$  is 0 and that silane (2) is identical to silane of presently claimed formula (II) and includes tetramethoxysilane which corresponds to presently claimed formula (II) when  $R^2$  is methyl and  $p+q$  is 0. There is also disclosed method for forming a silica-containing film comprising applying the coating to substrate and then drying, i.e. heating, to obtain a silica-containing film (col.3, lines 23-26 and 37-40, col.4, lines 9-15, col.5, lines 36-40, col.5, line 56-col.6, line 5, col.7, lines 49-50, and col.14, lines 18-30). It is noted that page 9 of the present specification defines void-forming solvent as one with boiling point not less than 200 °C and thus, it is clear that the low vapor pressure solvent of Yamada et al. is identical to the void-forming solvent presently claimed.

While there is no explicit disclosure in Yamada et al. to use coating as presently claimed and while Yamada et al. fails to exemplify the presently claimed coating, nevertheless, in light of the overlap between the claimed coating and the coating disclosed by Yamada et al., absent a showing of criticality for the presently claimed coating, it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use coating which is both disclosed by Yamada et al. and encompassed within the scope of the present claims and thereby arrive at the claimed invention.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. as applied to claims 1-2 and 5-6 above, and further in view of Zama (U.S. 2004/0034147).

The difference between Yamada et al. and the present claimed invention is the requirement in the claims of hollow polymer.

Zama, which is drawn to coating for semiconductor as is Yamada et al., disclose the use of hollow polymer particles in order to produce coating with good alkali, weather, heat, and oil resistances that is added to semiconductor coating in order to use a low dielectric property of air (paragraphs 10 and 39).

In light of the motivation for using hollow polymer particles disclosed by Zama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such hollow polymer particles in the coating of Yamada et al. in order to produce coating with good alkali, weather, heat, and oil resistances, and thereby arrive at the claimed invention.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

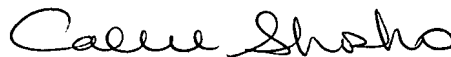
Kurosawa et al. (U.S. 6,410,150) and Hayashi et al. (U.S. 6,413,647), similar to Yamada et al. (U.S. 6,645,881), each disclose coating composition for forming silica-containing film wherein the coating comprises solvent and hydrozylate of compounds including those of presently claimed formula (I) and formula (II), however, there is no disclosure or suggestion of hollow polymer particles and while each reference discloses long list of solvents, there is no disclosure or suggestion to utilize combination of void-forming solvent and additional solvent as presently claimed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

Art Unit: 1714

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
5/13/07